

**PLACER COUNTY
AIR POLLUTION CONTROL DISTRICT**

2012 TRIENNIAL PROGRESS REPORT

**PREPARED IN COMPLIANCE WITH
THE CALIFORNIA CLEAN AIR ACT**

October 2013

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1 OVERVIEW OF THE AIR QUALITY PLANNING PROCESS

1.1 Background

The Placer County Air Pollution Control District (District) is one of 35 local air districts established pursuant to Section 40002 of the California Health & Safety Code (HSC). The District is a “county” district with its jurisdiction being the County of Placer which extends from the North Lake Tahoe in the east, over the crest of the Sierra Nevada, to the Sacramento Valley in the west. With its special topographic features, portions of Placer County are located within the boundaries of three air basins: the Sacramento Valley Air Basin (SVAB), the Mountain Counties Air Basin (MCAB), and the Lake Tahoe Air Basin (LTAB).

The California Clean Air Act (CCAA) of 1988 requires the California Air Resources Board (CARB) to establish and adopt ambient air quality standards to protect public health, safety, and welfare. Under the CCAA requirement, CARB established criteria for designating areas as attainment or nonattainment for the state standards. According to the area designation adopted in 1989, the SVAB and MCAB portions of Placer County were designed as nonattainment for the state ozone standard¹ and the entire county was designed as nonattainment for the state particular matter standard (PM₁₀).

The CCAA requires that an air district which has not attained the state air quality standards shall prepare a plan to attain these standards by the earliest practical date. However, when the California legislature passed the CCAA in 1988, it recognized the difficulty in managing PM₁₀. Therefore, state law does not require attainment plans for the state PM₁₀ standard. In compliance with the CCAA, the District prepared the 1991 Air Quality Attainment Plan (AQAP) which was designed to make expeditious progress toward attaining the state ozone standard and contained proposed control programs/strategies on stationary sources, transportation, and indirect sources. The 1991 AQAP was adopted by the District’s Board of Directors on April 7, 1992 and approved by the California Air Resources Board (CARB) on March 12, 1993.

In addition to the AQAP, the CCAA also required that by the end of 1994 and once every three years thereafter, that nonattainment districts prepare a report to demonstrate their progress toward attaining the state air quality standards. The triennial progress report should include the air quality improvement and the amount of emission reductions achieved from control measures adopted for the preceding three year period. The districts must also review and revise their attainment plan, if necessary, to correct deficiencies in meeting the progress goals and to incorporate new data or projections. This 2012 Triennial Report was prepared to fulfill these requirements for the years 2009-2011.

1.2 Triennial Reports Since 1991

The CCAA requirement for the first Triennial Progress Report and revision of the AQAP was fulfilled with the preparation and adoption of the 1994 Sacramento Area Regional Ozone Attainment Plan (1994 Ozone SIP). This 1994 Ozone SIP was prepared to demonstrate how and when the Sacramento Federal Ozone Nonattainment Area (SFONA) would attain the federal ambient air quality standards for ozone and was construed by the CARB to also fulfill the 1994

¹ The LTAB was designated by CARB as nonattainment-transitional for the state ozone standard in March 2010. This latest area designation may result in the revision of AQAP prepared by local air districts as well as the Regional Plan Updates developed by Tahoe Regional Planning Agency (TRPA). The future planning requirement under CCAA will be determined by the collaborative efforts between TRPA and CARB.

requirements of the CCAA with certain appendices attached. The 1994 Ozone SIP was adopted by the District's Board of Directors on December 20, 1994, and approved by the U.S. Environmental Protection Agency (EPA) on September 26, 1996.

The 1997 Triennial Progress Report was a requirement of the CCAA to assess the progress in the three years since the 1994 Plan. The District's Board of Directors approved the adoption of the 1997 Triennial Progress Report on July 16, 1998. CARB conditionally approved this plan on August 27, 1998. This approval was based on the District's review of the document Identification of Achievable Performance Standards and Emerging Technologies For Stationary Sources, March 1998, which identified further measures for emission reductions. Discussion on these control measures were outlined under the 2000 Triennial Progress Report Section.

On April 11, 2001, the District's Board of Directors approved the 2000 Triennial Progress Report. This Triennial Progress Report met the requirement of the CCAA to assess the progress since the adoption of the 1997 Triennial Progress Report. Three (3) ROG control measures listed in 1997 Triennial Progress Report were still pending adoption during this period. These were Polyester Resin Operations, Pleasure Craft Coating, and Internal Combustion Engines. Since these control measures were not adopted, there was a deficiency in the 1997 Triennial Progress Report.

On October 13, 2005, the District's Board of Directors approved the 2003 Triennial Progress Report. The three ROG control measures pending in the 2000 Triennial Report were adopted during this triennial evaluation period. In addition, the District adopted one NOx control measure (Stationary Internal Combustion Engine) to fulfill the commitment the District made in the 1994 Ozone SIP.

On August 12, 2010, the District's Board of Directors approved the 2009 Triennial Progress Report for two triennial evaluation periods (2003-2005 and 2006-2008). In this Triennial Progress Report, a total of nine stationary/area-wide control rules were amended or adopted. Although not all of these rule actions resulted in significant emission reductions, the District has achieved about 0.66 tons per day emissions reduction in ROG from these rule activities.

1.3 2012 Triennial Report

The 2012 Triennial Progress Report is a requirement of the CCAA to assess the progress made towards attaining the state air quality standards in Placer County from the evaluation period of 2009 – 2011.

The triennial report 1) describes the historical trends in ambient air quality levels; 2) provides information on the emission inventories in Placer County; 3) summarizes the progress of emissions reductions from 2009 to 2011 in Placer County; and 4) concludes with an overview of air quality planning progress.

The historical trends in ambient air quality show an improvement in air quality in Placer County. Air quality indicators show significant overall progress toward reducing exceedences of the ambient ozone standards since the late 1990s.

An emission inventory is an estimate of air pollutants emitted into the air over a period of time, such as a day or a year. Information from the emission inventory includes source types, source

locations, and the current amount of pollutant emissions emitted in our region. They are used to identify the sources of emissions for planning purposes.

Emission inventories for ozone precursor pollutants take into account stationary source, area-wide sources, and mobile sources, excluding biogenic sources and greenhouse gas emissions. The emission inventories indicate the majority of ROG and NOx emissions in Placer County are from mobile sources. Between 1990 and 2010 emission inventory trends in Placer County show that the overall ROG emissions declined from 39 tons per day to 25 tons per day, a 37% decrease; and the NOx emissions declined from 36 tons per day to 29 tons per day, a 21% decrease. These emission reductions have mainly occurred from on-road and off-road mobile sources. From 2010 to 2020, overall Placer County ROG emissions are expected to continue decreasing another 1% as well as NOx emissions decreasing another 33%. Projected emission forecasts to 2020 show a more gradual declining trend.

2 AIR QUALITY TRENDS

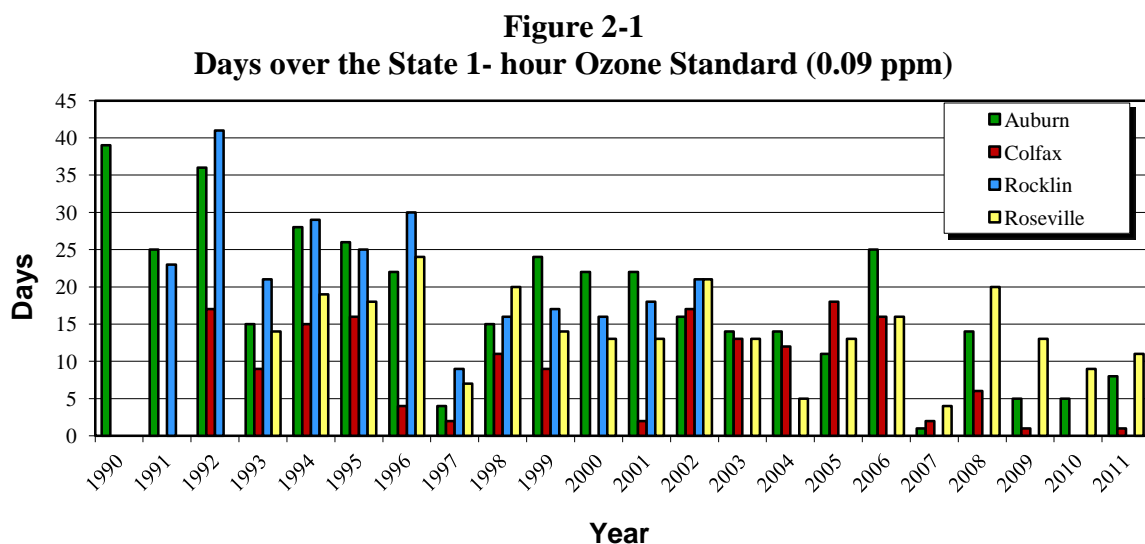
The Health and Safety Code (HSC section 40924 (b)) requires Districts to report their progress of air quality improvement for ozone that was achieved during the preceding three-year evaluation period based on ambient concentration measurements and air quality indicators (statistically derived values based on monitoring air quality data). In addition, the Health and Safety Code (HSC section 39607 (f)) requires Districts to use one or more state approved air quality indicator to assess the progress in attaining the state ambient health standards (HSC section 39607(f)). CARB has approved three indicators for use: the Expected Peak Day Concentration or EPDC indicator, a 1-hour population weighted exposure indicator, and a 1 hour area weighted exposure indicator. This section discusses the ozone air quality trends using these CARB air quality indicators.

2.1 Ozone Exceedences

The number of ozone exceedence days in an area is the most common method to assess the air quality trend. The state ambient air quality standard for the 1-hour ozone standard was set at 0.09 parts per million (ppm) in 1988. In 2005, the CARB approved another air quality standard for 8-hour ozone of 0.070 ppm. Exceedences occur when the monitored ozone concentrations exceed the standards.

During 2009 to 2011, there were three monitoring stations operating in Placer County: Auburn, Colfax, and Roseville for ozone monitoring². The District operates the Auburn and Colfax stations with CARB maintaining the Roseville station. The Auburn station has the most complete ozone data available from 1974 to present. The Rocklin station operated from 1991 until it was closed in 2002.

Figure 2-1 shows the number of days at each monitoring site in Placer County that exceeds the state 1-hour ozone standard (0.09 ppm) since 1990. An exceedence of this standard occurs when the monitored ambient concentration level is greater than 0.095 ppm.

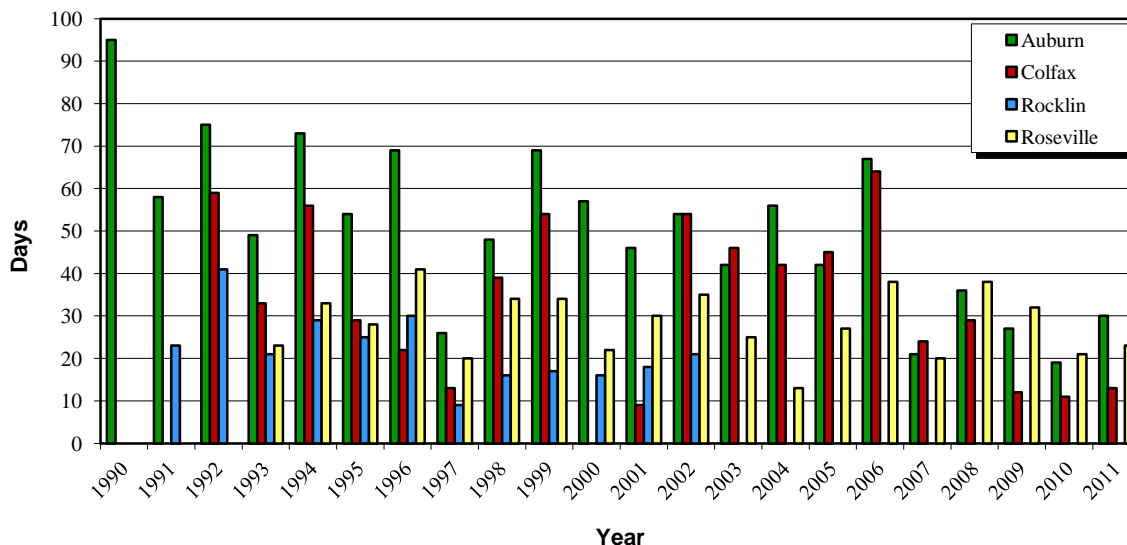


* Ozone data from Rocklin was only available from 1991 to 2002.

² The District added the Lincoln station into the ozone monitoring network in 2012 and plans to add an additional station at Tahoe City in FY 2013/2014.

Figure 2-2 shows the number of days at each monitoring site that exceeds the State 8-hour ozone standard (0.070 ppm) since 1990. An exceedence of this standard occurs when the hourly monitored ambient concentrations averaged over an 8-hour period is greater than 0.071 ppm.

Figure 2-2
Days over the State 8- hour Ozone Standard (0.070 ppm)



* Ozone data from Rocklin was only available from 1991 to 2002.

The ozone exceedences from each station are different due to differences in meteorology and the economic activity patterns around the station from year to year. Although not all patterns show a steady decline, they do show a trend downward in general. It suggests that the worst years for air quality are becoming less severe and the best air quality years are becoming cleaner with fewer exceedence days.

2.2 Ozone Exposure Indicators

In July 1993, the California Air Resources Board approved three progress-reporting indicators for use in assessing advancement toward attaining the state air quality standards. “An indicator is a way of summarizing measured air quality data so as to represent one aspect of air quality in a specific area. An indicator summarizes and represents air quality in the same sense that the Dow Jones Industrial Average (DJIA) summarizes and represents the condition of the stock market. An air quality-related indicator is based on measured air quality data, whereas the DJIA is based on stock price data. One application for indicators is measuring and reporting the progress that has been made in attaining the state standards. In this case, progress means the change or improvement in air quality over time that can be attributed to a reduction in emissions rather than the influence of other factors, such as variable meteorology.”³ These are 1) the expected peak day concentration, 2) the population weighted exposure indicator, and 3) the area weighted exposure indicator. These indicators represent three different aspects of air quality data that measure progress or changes in air quality over time.

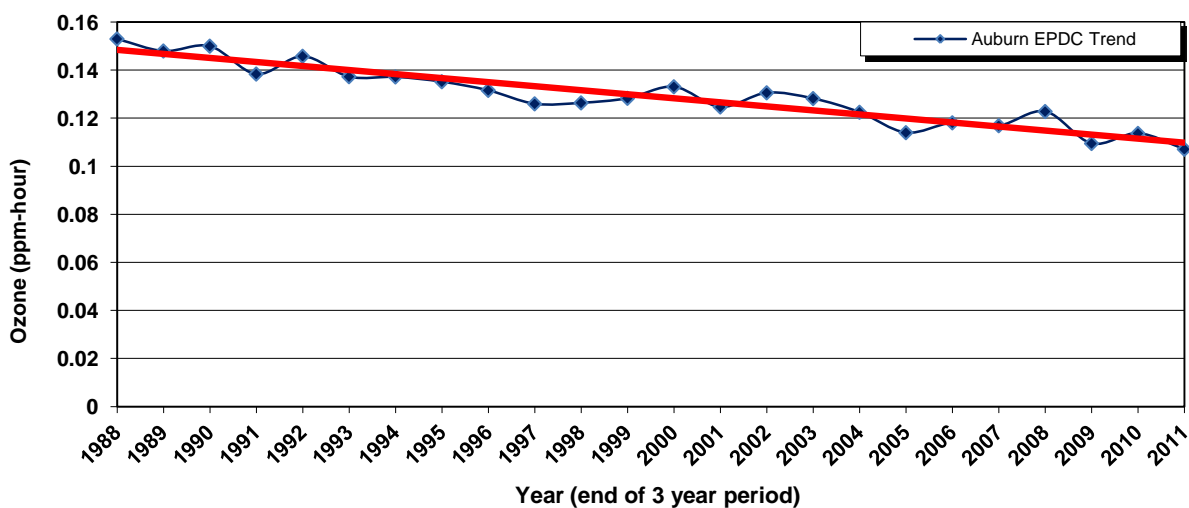
³ Guidance For Using Air Quality-Related Indicators in Reporting Progress in Attaining the State Ambient Air Quality Standards. California Air Resources Board, September 1993.

2.2.1. Ozone Expected Peak Day Concentrations

The expected peak day concentration (EPDC) is used as the “hot spot” indicator. This peak indicator is derived by a statistical method and is representative of specific monitoring sites. This indicator assesses air quality trends at the specific air monitor locations and does not include trends in air quality from surrounding areas. The EPDC is defined as the air quality concentration expected to recur at a rate of once a year. Each EPDC value is calculated using three years of monitoring data; for example, the EPDC for 2002 uses 2000 - 2002 data.

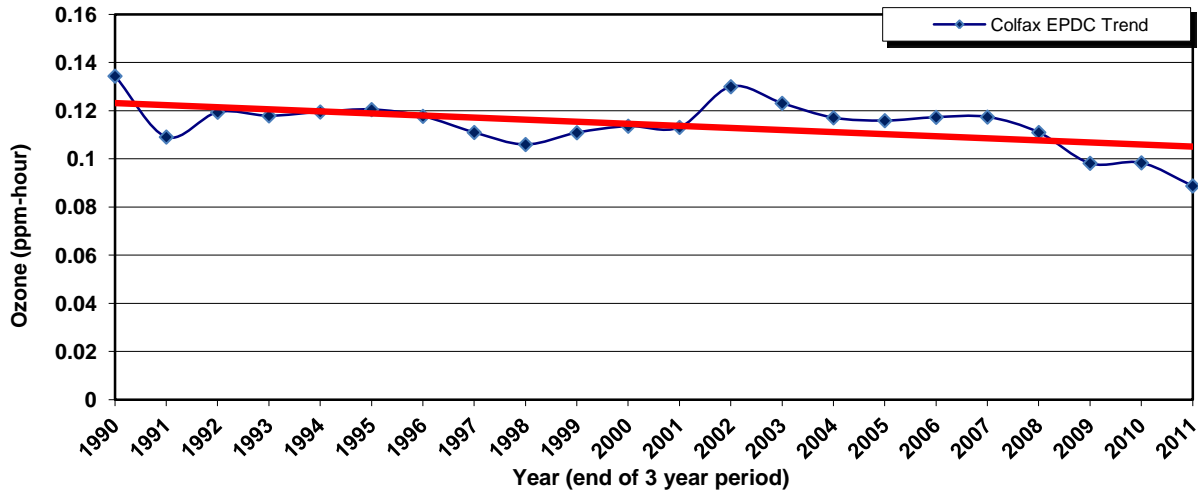
Figures 2-3 to 2-5 illustrates the ozone EPDC indicators from 1990 to 2011 at three monitoring sites (Auburn, Colfax, and Roseville) in Placer County. Since the Rocklin site was closed in 2002 there is no monitoring data after 2002. The Auburn - Dewitt monitoring site is the only location in Placer County which can be used to document the EPDC progress from the base period (1986 - 1988) to the end period (2009 - 2011) as it has been located in the same community for the analyzed time. At the Auburn site, there was a 30.0% decrease in the EPDC from the base period through the end period. At the Colfax monitoring site there was a 33.93% decrease in the EPDC between 1990 and 2011. And there was a 14.63% decrease in the EPDC occurring at Roseville monitoring site between 1993 and 2011. Overall this particular indicator shows a decrease in the local peak ozone concentrations; which equates to an improvement of air quality.

Figure 2-3
Expected Peak Day Concentration (EPDC) Ozone Trend
Auburn Monitoring Site



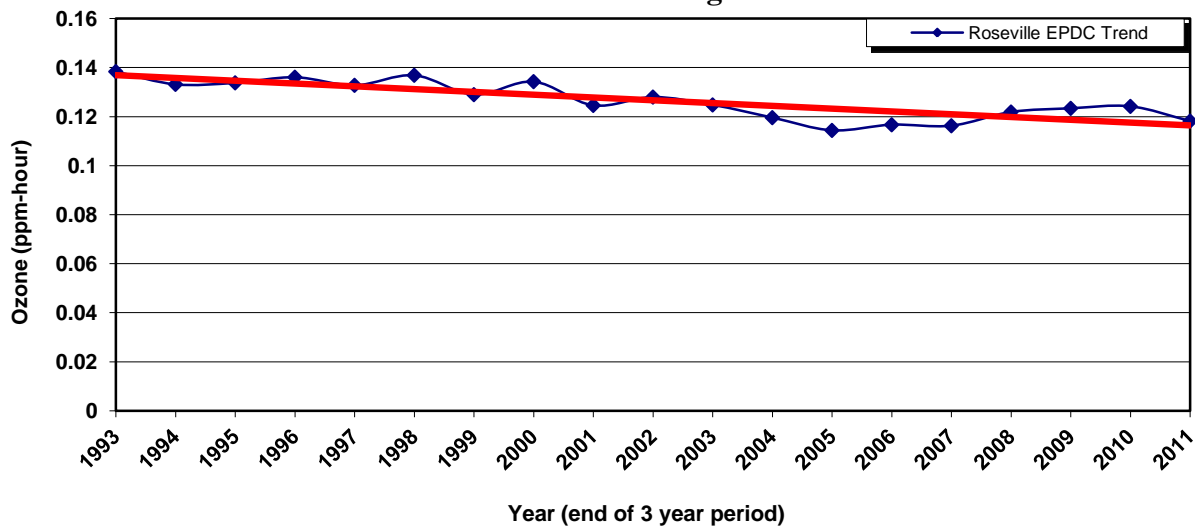
EPDC data source: California Air Resource Board

Figure 2-4
Expected Peak Day Concentration (EPDC) Ozone Trend
Colfax Monitoring Site



EPDC data source: California Air Resource Board

Figure 2-5
Expected Peak Day Concentration (EPDC) Ozone Trend
Roseville Monitoring Site



EPDC data source: California Air Resource Board

2.2.2. Population-Weighted Exposure Indicator

The population-weighted exposure indicator is a statistically derived air quality indicator provided by CARB. The purpose of the population-weighted indicator is to characterize the potential average outdoor exposure per person to concentrations above the level of the state ozone standard. The population-weighted exposure (PWE) represents a composite of exposures around each monitoring site that is weighted to equally emphasize the exposure for each person in the area. Exposure can be thought of as the annual sum of the number of hours above the state health standard. For example, a measured ozone concentration of 0.13 ppm for 2 hours represents an exposure of 0.8 ppm-hours above the state ozone standard of 0.09 ppm $((0.13 \text{ ppm} - 0.09 \text{ ppm}) \times 2 \text{ hours} = 0.8 \text{ ppm-hours})$.

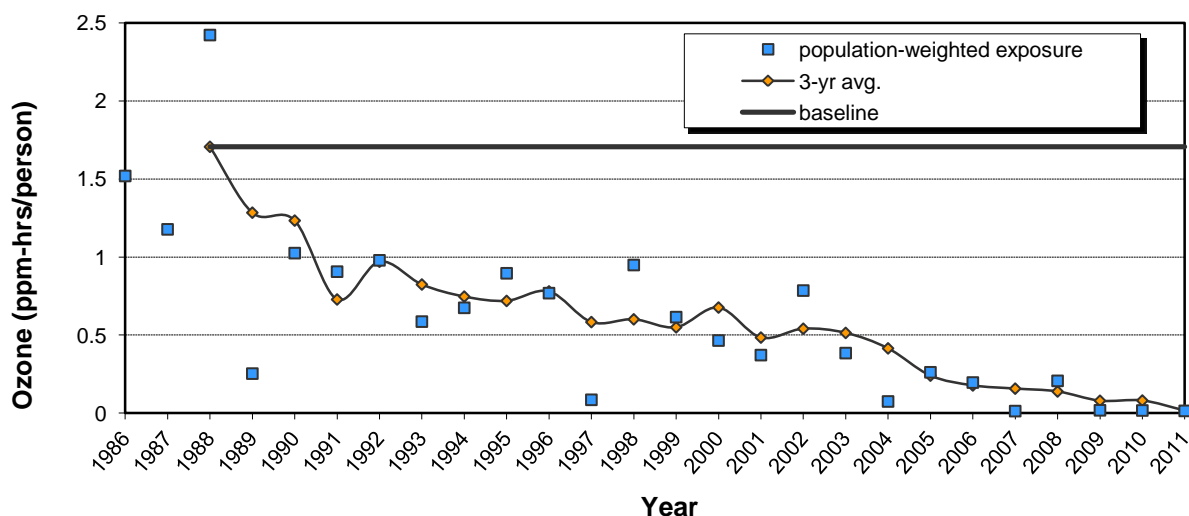
Table 2-1 and Figure 2-6 summarize the population-weighted ozone exposure for the 3-year average base period (1986 - 1988) and the 3-year average period (2009 - 2011) within Placer County. In the previous 2009 Triennial Update, this information was not included due to CARB's funding and workload; it is included as part of this 3 year average period.

During this time there has been a 99% decrease in population-weighted ozone exposure between the based period and the 2009-2011 period. Compared with the previous triennial period (2006-2008), there is an 88% decrease in population-weighted ozone exposure. The results represent a defined downward trend in ozone exposure below the baseline.

Table 2-1
Summary of Population-Weighted Exposure in Placer County

Exposure Indicator	Base Period (1986 - 1988) 3-year average	Previous Triennial Period (2006-2008)	End Period (2009 - 2011) 3-year average	Reduction (%) Compare with Base Period	Reduction (%) Compare with 2006-2008 Period
Population Weighted (ppm-hrs/person)	1.707	0.139	0.017	99.02%	87.92%

Figure 2-6
Population-Weighted Exposure Trends in Placer County



Exposure data source: California Air Resource Board

2.2.3. Area Weighted Exposure Indicator

The purpose of the area-weighted exposure (AWE) indicator is to characterize the potential average annual outdoor exposure per unit area. The area-weighted exposure indicator represents a composite of exposure at individual locations that have been weighted to emphasize equal exposures throughout the area.

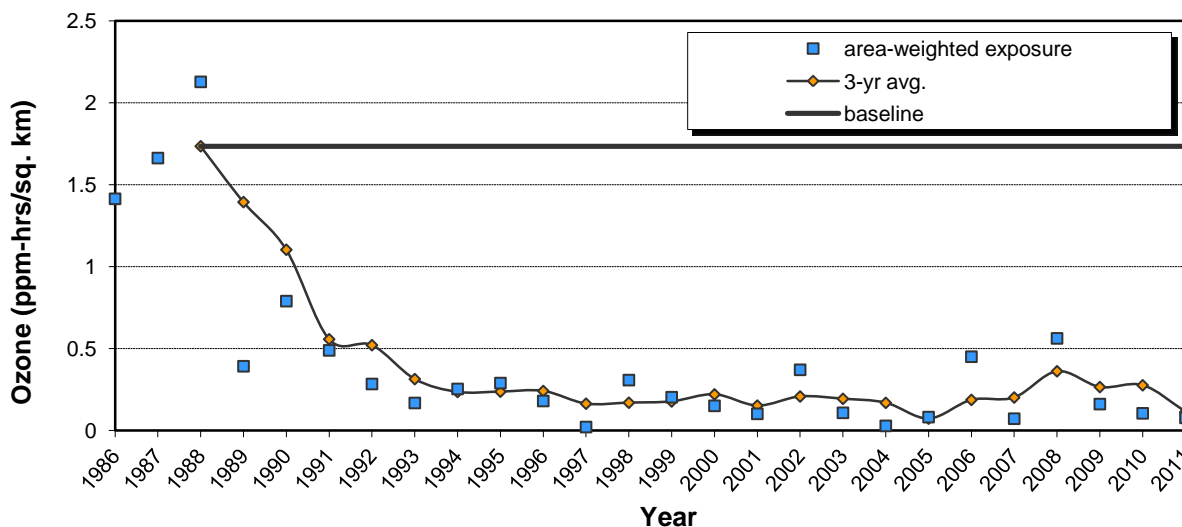
Table 2-2 and Figure 2-7 summarize the area-weighted ozone exposure for the 3-year average base period (1986 - 1988) and the 3-year average end period (2008 - 2011) within Placer County. According to the table, there is a 93% decrease in the area-weighted ozone exposure between the

base period and the 2009-2011 period. Compared with the previous triennial period, there is a 68% decrease in area-weighted ozone exposure. As the population-weighted ozone indicator, the area-weighted ozone exposure also represents a defined downward trend in ozone exposure above the start standard.

Table 2-2
Summary of Area-Weighted Exposure in Placer County

Exposure Indicator	Base Period (1986 - 1988) 3-year average	Previous Triennial Period (2006-2008)	End Period (2009 – 2011) 3-year average	Reduction (%) Compare with Base Period	Reduction (%) Compare with 2006-2008 Period
Area Weighted (ppm-hrs/sq. km)	1.735	0.363	0.116	93.34%	68.14%

Figure 2-7
Area-Weighted Exposure Trends in Placer County



Exposure data source: California Air Resource Board

2.3 Summary of the Results of Air Quality Indicators

Air quality indicators are technical tools used for the exposure analysis in local air quality within Placer County. The population-weighted exposure and area-weighted exposure analyses are based solely on ambient (outdoor) ozone measurements using the 1-hour ozone standard. The calculation methodology assumes that an “exposure” occurs when a person experiences a 1-hour ozone concentration outdoors that is higher than 0.09 ppm, the level of the State ozone standard. The Expected Peak Day Concentration analysis shows the trend at the various air monitoring locations.

The analysis of the expected peak day concentration levels, the population-weighted and area-weighted indicators all show a decline trend in ozone exposure concentrations measured within Placer County. This decrease demonstrates an improvement in the current air quality control progress made in reducing the peak ozone concentrations and the ozone exposure.

3 EMISSION INVENTORY

3.1 Development of Emission Inventories

The emission inventory provides a foundation to validate the reduction of emissions resulting from federal, state, and local regulations; it also can be used to assess the progress that the region is making toward attaining the California air ambient quality standards. In order to determine to what extent various sources within the region are responsible for ozone precursor production, emission inventories have been developed for ROG and NO_x.

The emission inventories for these two ozone precursors are divided into four major categories. These include stationary, area-wide, on-road mobile, and other mobile source groupings. Stationary sources include facilities such as cogeneration, or concrete/asphalt plants, while area-wide sources include an aggregate of individual small sources, which when grouped together have significant emissions such as dry cleaners or gasoline stations. On-road mobile sources consist of cars and trucks that travel on streets and highways. Other mobile sources include agricultural and construction equipment, trains, aircraft, and recreational vehicles. There are a number of subcategories within each major category.

The emission inventory represents estimates of actual emissions that are calculated using reported or estimated process rates and emission factors. For example; emissions from a facility are calculated by process rates reported by the facility and emission factors estimated by source tests. Motor vehicle emissions are estimated by the fleet mix, vehicle mile traveled, vehicle speeds, and vehicle emission factors.

To derive future year emission inventories, a current base year inventory is projected forward based on the expected growth rates of the population, travel, employment, industrial/commercial activities, and energy use. In addition, the emission projections take into account the control factors based on historical and anticipated emission reduction effects from previous control measures adopted by federal, state and local governments.

3.2 Emission Inventory Updates

Emission inventories are updated and improved to reflect the conditions within the region and to better determine the contribution of various sources of air pollution. The latest updated inventories represented in this report are from CARB based on the most current 2008 base year emission estimates⁴ and projected emissions for the target years. Tables 3-1 and 3-2 provide updated source category estimates of Placer County daily emissions (tons per day) of ROG and NO_x for 1990, 1995, 2000, 2005, 2010, 2015, and 2020. Please note that these updates include emission forecasts through 2020 based on the expected growth and control factors, so future emission trends can be forecasted.

⁴ The California Almanac of Emissions and Air Quality, 2009 Edition <http://www.arb.ca.gov/aqd/almanac/almanac.htm>

Table 3-1
Placer County ROG Emission Inventory

ROG Emissions (tons per day) - Placer County*							
	1990	1995	2000	2005	2010	2015	2020
Stationary Sources							
FUEL COMBUSTION	0.28	0.31	0.37	0.44	0.44	0.45	0.46
WASTE DISPOSAL	0.26	0.24	0.08	0.09	0.10	0.11	0.12
CLEANING AND SURFACE COATINGS	3.27	3.10	1.62	1.63	1.74	1.90	2.05
PETROLEUM PRODUCTION AND MARKETING	0.94	0.74	0.73	0.71	0.73	0.79	0.85
INDUSTRIAL PROCESSES	2.67	3.20	1.34	1.54	1.74	1.95	2.13
Total Stationary Sources	7.42	7.58	4.15	4.41	4.75	5.20	5.61
Area-Wide Sources							
CONSUMER PRODUCTS	1.90	1.83	1.93	1.92	2.04	2.20	2.38
ARCHITECTURAL COATINGS/SOLVENTS	0.59	0.70	0.84	0.87	0.93	1.01	1.09
PESTICIDES/FERTILIZERS	0.16	0.67	0.19	0.19	0.19	0.19	0.19
ASPHALT PAVING / ROOFING	0.18	0.16	0.20	0.21	0.21	0.22	0.22
RESIDENTIAL FUEL COMBUSTION	1.66	1.82	1.98	2.11	2.18	2.26	2.34
FARMING OPERATIONS	0.52	0.52	0.51	0.51	0.51	0.51	0.51
MISCELLANEOUS PROCESSES	1.19	1.20	0.89	0.89	0.90	0.91	0.92
Total Area-Wide Sources	6.21	6.91	6.54	6.70	6.96	7.30	7.66
ON-Road Mobile Sources							
PASSENGER	6.55	5.24	4.14	2.66	1.34	0.87	0.67
LIGHT DUTY TRUCKS	5.46	4.60	3.75	2.49	1.62	1.31	1.10
MEDIUM DUTY TRUCKS (MDV)	0.81	0.91	0.80	0.67	0.41	0.37	0.35
HEAVY DUTY GAS TRUCKS	2.27	2.32	1.95	1.52	0.83	0.69	0.63
HEAVY DUTY DIESEL TRUCKS	1.07	0.75	0.74	0.80	0.73	0.54	0.40
MOTORCYCLES (MCY)	0.65	0.59	0.39	0.81	0.63	0.62	0.64
BUSES	0.08	0.05	0.05	0.04	0.03	0.03	0.03
MOTOR HOMES (MH)	0.09	0.08	0.06	0.04	0.02	0.01	0.01
Total On-Road Motor vehicles	16.98	13.64	11.06	8.36	5.19	4.08	3.46
Off-Road Mobile Sources							
AIRCRAFT	0.02	0.02	0.02	0.02	0.02	0.02	0.02
TRAINS	0.18	0.19	0.20	0.21	0.20	0.20	0.21
RECREATIONAL BOATS	4.31	4.31	4.58	4.05	3.63	3.40	3.35
OFF-ROAD RECREATIONAL VEHICLES	1.34	1.40	1.43	2.06	2.41	2.72	3.17
OFF-ROAD EQUIPMENT	2.03	1.86	1.78	1.64	1.32	1.08	0.96
FARM EQUIPMENT	0.30	0.28	0.25	0.21	0.17	0.11	0.07
FUEL STORAGE AND HANDLING	0.37	0.37	0.37	0.30	0.19	0.15	0.13
Total Off-Road Motor Vehicles	8.54	8.44	8.65	8.50	7.94	7.69	7.91
Grand Total	39.15	36.57	30.41	27.96	24.84	24.26	24.64

*Data source: CARB Emission Projection Data, base year: 2008

**Table 3-2
Placer County NOx Emission Inventory**

NOx Emissions (tons per day) - Placer County*							
	1990	1995	2000	2005	2010	2015	2020
Stationary Sources							
FUEL COMBUSTION	2.34	2.77	2.96	3.23	3.41	3.57	3.68
WASTE DISPOSAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INDUSTRIAL PROCESSES	0.08	0.09	0.12	0.14	0.15	0.16	0.18
Total Stationary Sources	2.42	2.85	3.08	3.37	3.56	3.73	3.86
Area-Wide Sources							
RESIDENTIAL FUEL COMBUSTION	0.97	0.95	0.97	0.98	0.98	0.99	1.00
MISCELLANEOUS PROCESSES	0.09	0.10	0.10	0.11	0.11	0.11	0.12
Total Area-Wide Sources	1.06	1.04	1.07	1.08	1.09	1.10	1.11
ON-Road Mobile Sources							
PASSENGER	4.68	4.05	3.39	2.07	1.07	0.68	0.45
LIGHT DUTY TRUCKS	5.53	5.37	4.72	3.04	1.77	1.24	0.86
MEDIUM DUTY TRUCKS (MDV)	1.04	1.38	1.38	1.18	0.64	0.48	0.35
HEAVY DUTY GAS TRUCKS	1.60	1.28	1.04	0.93	0.70	0.66	0.62
HEAVY DUTY DIESEL TRUCKS	8.69	9.04	10.17	13.10	11.05	7.27	4.87
MOTORCYCLES (MCY)	0.08	0.08	0.07	0.20	0.19	0.20	0.21
BUSES	0.24	0.23	0.27	0.35	0.29	0.27	0.24
MOTOR HOMES (MH)	0.16	0.20	0.17	0.16	0.11	0.09	0.07
Total On-Road Motor vehicles	22.01	21.63	21.21	21.03	15.82	10.88	7.67
Off-Road Mobile Sources							
AIRCRAFT	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRAINS	3.84	3.85	4.11	3.22	2.73	2.87	2.99
RECREATIONAL BOATS	1.15	1.20	1.18	1.55	1.64	1.56	1.54
OFF-ROAD RECREATIONAL VEHICLES	0.03	0.03	0.03	0.05	0.06	0.08	0.10
OFF-ROAD EQUIPMENT	4.05	3.73	3.77	3.54	2.99	2.32	1.72
FARM EQUIPMENT	1.66	1.41	1.22	1.05	0.85	0.61	0.40
FUEL STORAGE AND HANDLING	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Off-Road Motor Vehicles	10.72	10.22	10.33	9.42	8.27	7.44	6.74
Grand Total	36.20	35.74	35.69	34.90	28.74	23.16	19.39

*Data source: CARB Emission Projection Data, base year: 2008

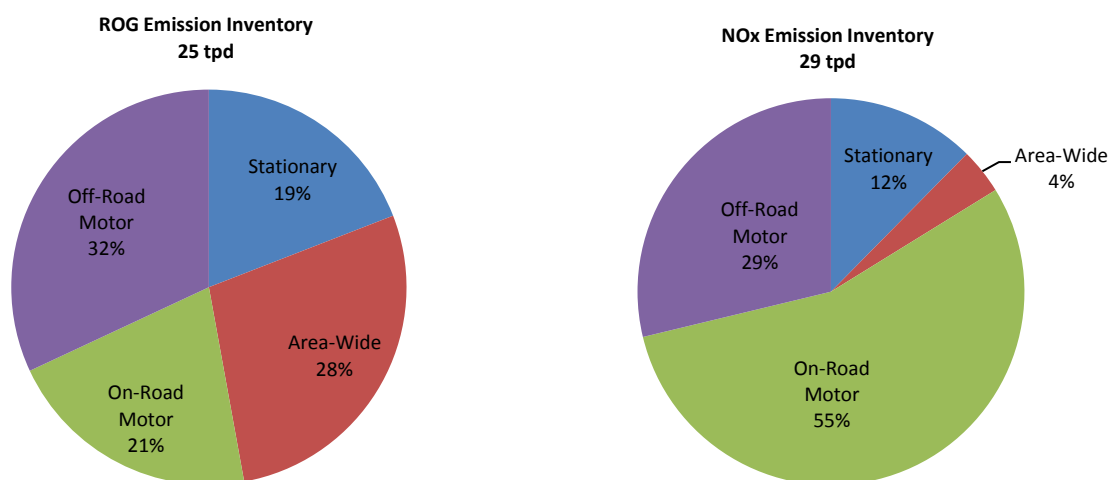
According to Tables 3-1 and 3-2, the stationary source emissions contribution results primarily from cleaning and surface coatings activities, petroleum production and marketing, industrial processes for ROG emissions and fuel combustion for NOx emissions. The ROG emissions from area-wide source categories are primarily from consumer products and residential fuel combustion. The major NOx emissions are in the area-wide source categories primarily from residential fuel combustion. Those emissions estimates for the stationary and area-wide source categories are based on actual throughput data and source test results reported from facilities and population-related methodology developed by CARB or local districts.

The majority of ROG and NOx emissions in Placer County come from on-road and off-road mobile sources. These mobile source emission categories consist of light-duty automobiles, various truck categories, recreational boats, off-road construction/industrial equipment, farm

equipment, and trains. The EMFAC 2007⁵ motor vehicle emission model developed by CARB is designed to estimate on-road mobile source emissions by using a wide variety of on-road motor vehicle types, vehicle emission factors, vehicle population, and vehicle miles traveled. CARB also developed the OFFROAD emission model to estimate average seasonal daily emissions from a large spectrum of diesel powered off-road equipment and developed forecasts based on anticipated growth and controls within each equipment category. The emission inventory shows that the major contribution to ROG emissions is from light-duty vehicles and recreational boats. The major contribution to NOx emissions is from heavy-duty trucks and trains.

Figure 3-1 shows pie charts of the ROG and NOx emission inventories by the four source categories. The contribution from these major source categories to total ROG emissions in 2010 is 19% from stationary sources, 28% from area-wide sources, 21% from on-road mobile sources, and 32% from off-road mobile sources. The contribution to total NOx emissions is 12% from stationary sources, 4% from area-wide sources, 55% from on-road mobile sources, and 29% from off-road mobile sources. The District regulates emissions from stationary sources that do not come from mobile sources, with CARB having direct authority over mobile sources.

Figure 3-1
2010 Emission Inventories in Placer County



3.3 Population and Vehicle Miles Traveled (VMT)

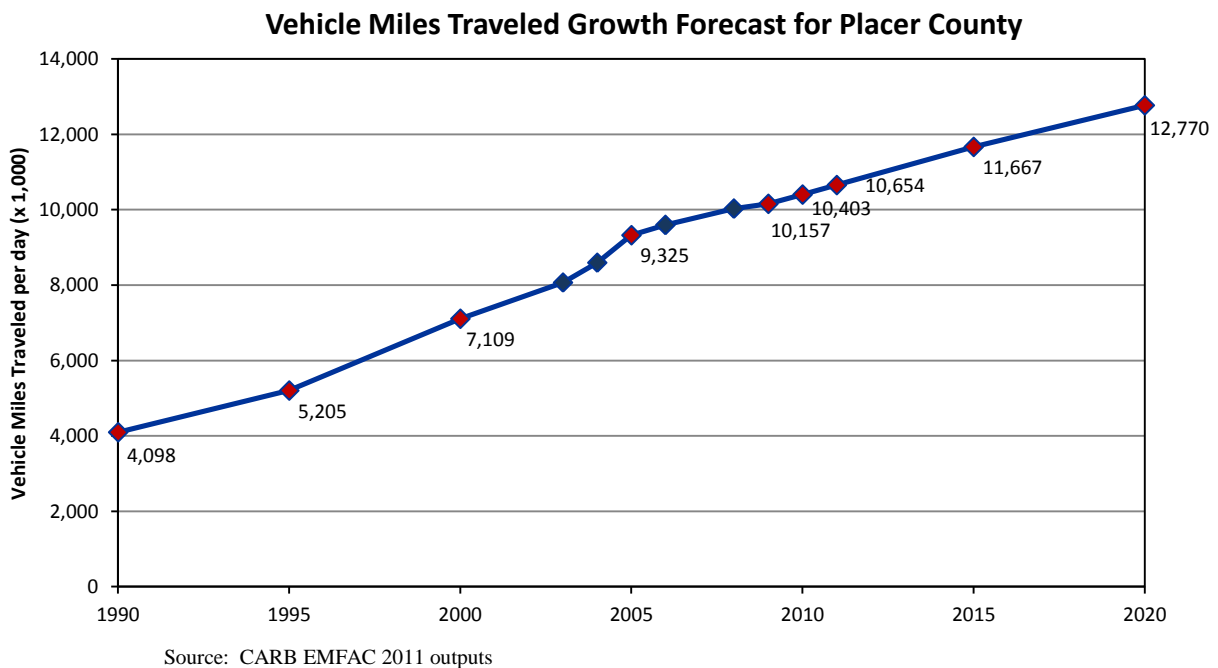
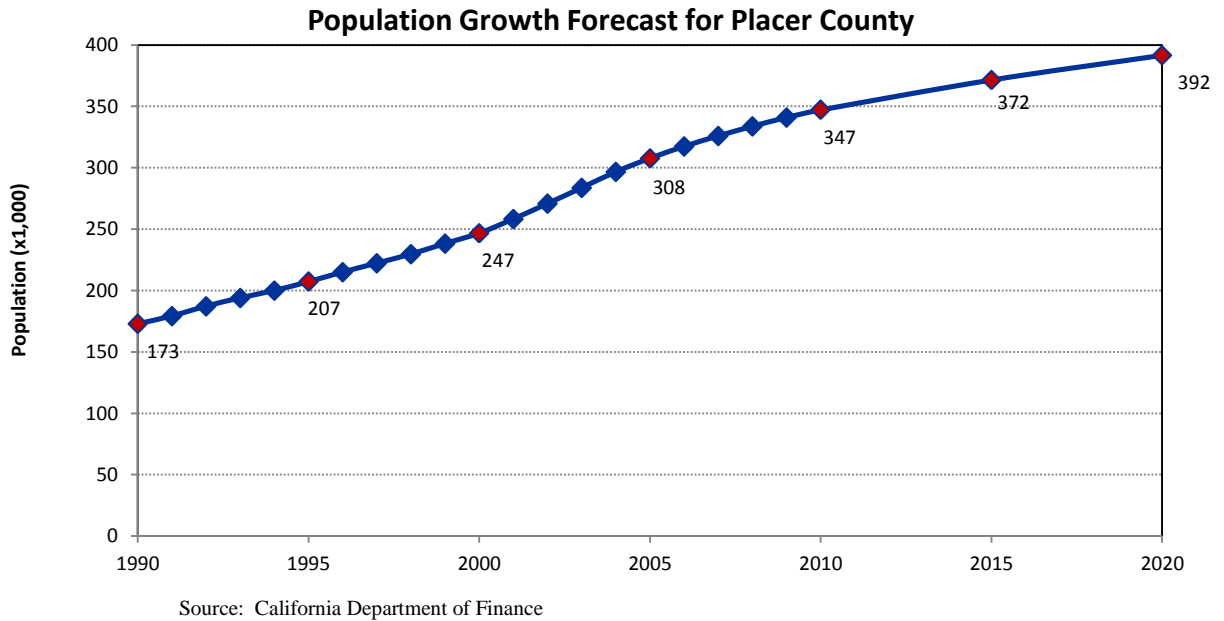
In addition to updates in the methodologies, process rates, and emission factors for individual emission source categories, updates in growth factors can also affect the emission inventory forecasts. Changes to the most recent growth assumptions for the Placer County population and daily vehicle miles traveled (VMT) could contribute to some of the emission differences in population-related area sources and on-road/off-road mobile sources.

Figure 3-2 illustrates the growth curve of the population and daily VMT between 1990 and 2020. According to the data, the Placer County population has increased about 4% from 2008 to 2010. Overall the Placer County population has grown about 101% when comparing the population from 1990 and 2010. Based on the growth forecast, the expected population in 2020 would be

⁵ The 2008 on-road mobile emissions were estimated by EMFAC 2007. CARB released EMFAC 2011 in October 2011 but the statewide on-road mobile emissions were not updated based on this latest motor vehicle emission model.

around 392,000, an expected increase of 13% from 2010 to 2020. In addition, the continued population growth contributes to the increases in daily VMT. In 2011, overall VMT in Placer County was estimated at 10.6 million miles per day, about 160% increase with VMT estimates from 1990. From 2008 to 2011, the daily VMT increased around 6%. According to the data forecast, there is an expected increase of 20% from 2011 to 2020. With Placer County's rapid growth over the last decade, VMT will contribute to emission changes in the future, which will be reflected in the emission inventory trends.

**Figure 3-2
Placer County Population and Vehicle Miles Traveled Growth**



3.4 Emission Inventory Trends

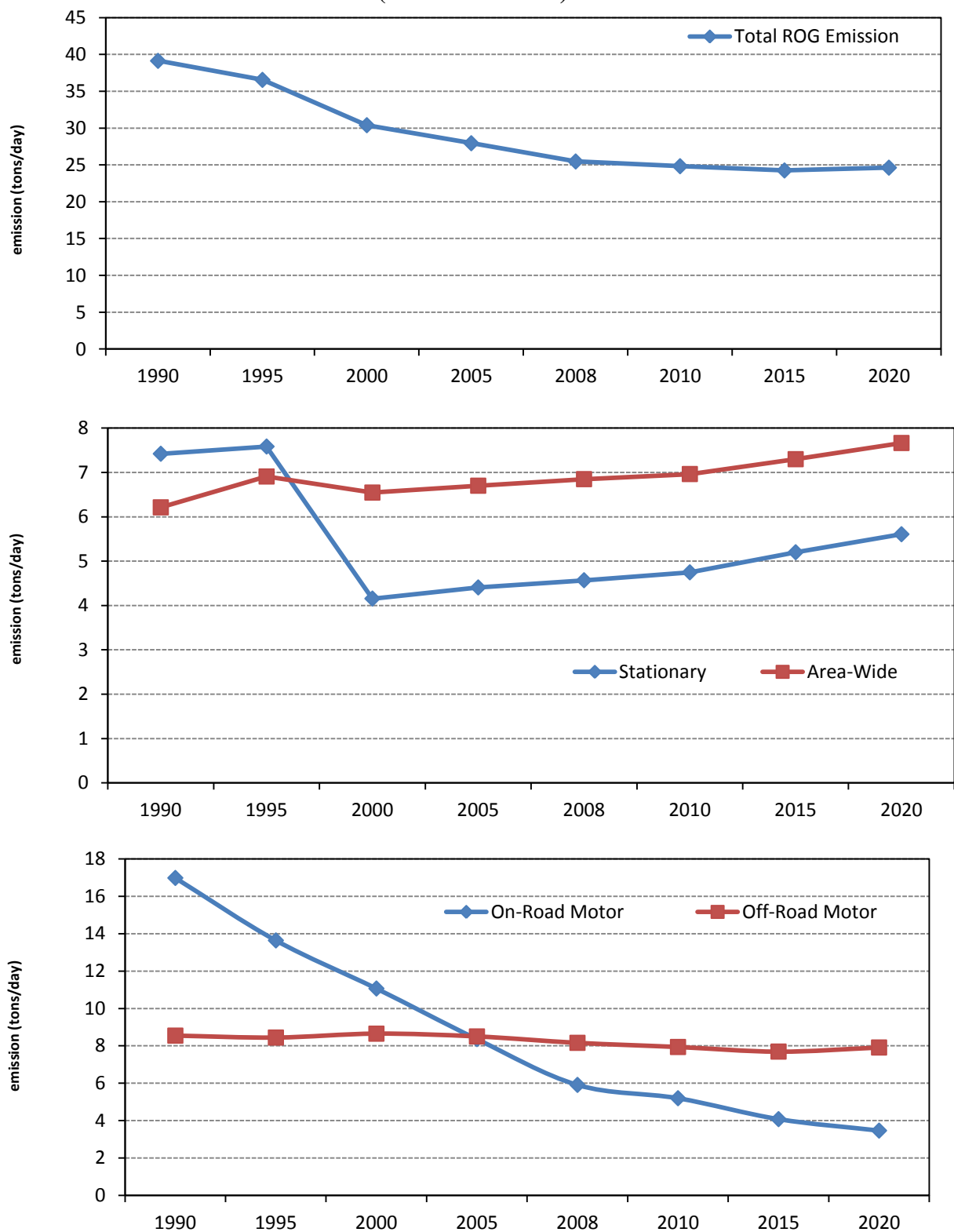
Figures 3-3 and 3-4 show the declining trend of both ROG and NOx emissions between 1990 and 2020. Between 1990 and 2010, the overall ROG emissions declined about 37%, and NOx emissions decreased about 21%. From 2008 to 2010, the overall ROG emissions reduced about 3% and NOx emission reduced about 7%. From 2010 to 2020, overall ROG emissions are expected to continue decreasing about 1% with NOx emissions decreasing about 33%.

These emission reductions are mostly from the on-road and off-road mobile sources categories, of which CARB has primary regulatory authority. Statewide mobile source regulations such as low emission vehicle programs and reformulated gasoline have been very effective in reducing ROG emissions from mobile sources despite the significant growth in the number of vehicle miles traveled. The more stringent mobile source emission standards, which are set by CARB, cleaner burning fuels, and advanced technologies for engine design or exhaust treatment have also largely contributed to the steady decline in NOx emissions.

However, for stationary and area-wide sources the ROG and NOx emissions have increased slightly since 2000 due to Placer County's population growth and subsequent housing and associated energy demands. These demands have increased emissions in fuel combustion, cleaning and surface coatings, and consumer products.

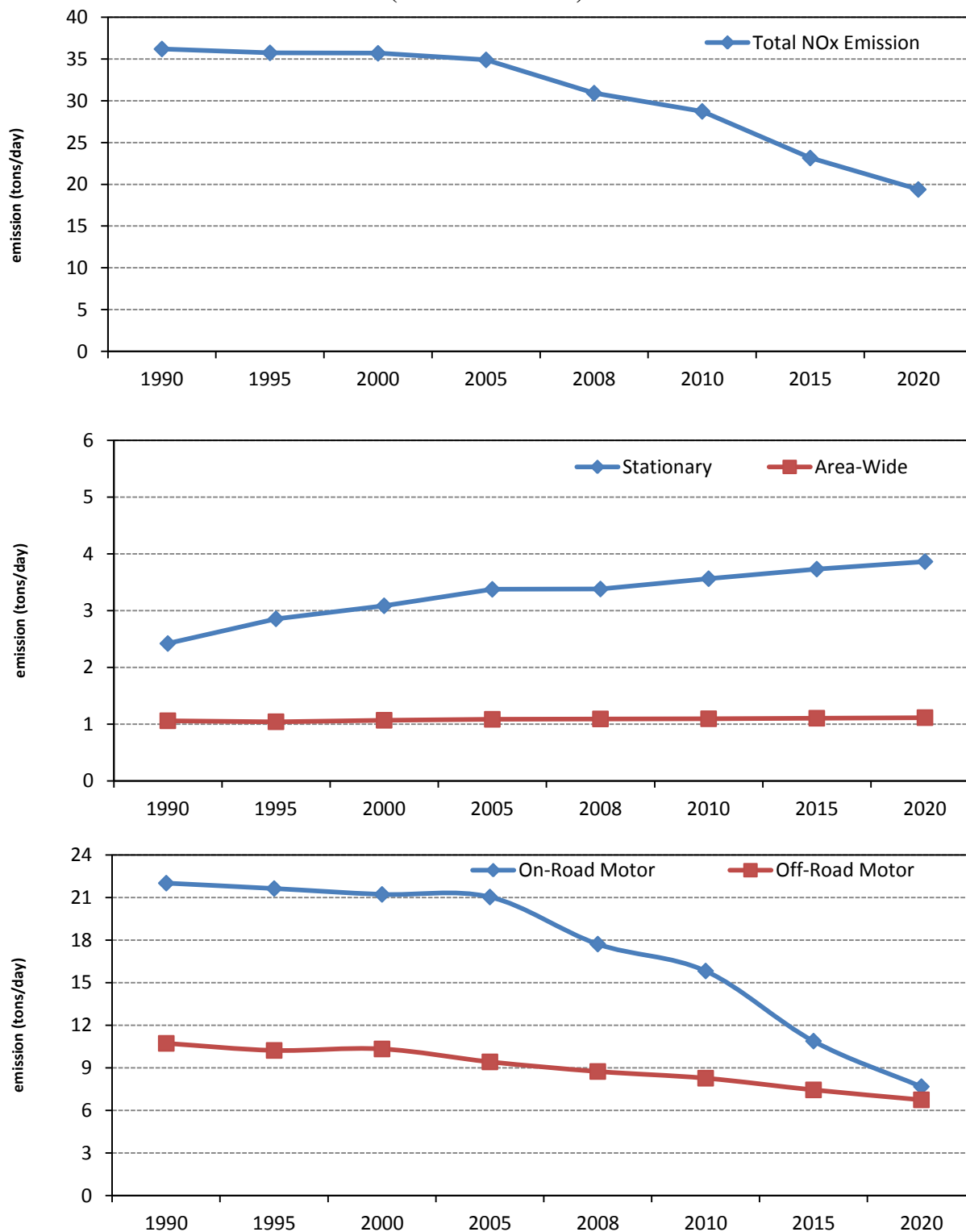
The District has focused more rulemaking on these categories. Several District related rules (discussed in the following chapter) have been adopted or amended between 2009 and 2011 to control and limit emissions from industrial coating and solvent usage, architectural coating, adhesives and sealants usage, and fuel combustion processes. CARB also has focused much of its control efforts on consumer products. These control efforts will provide additional ROG and NOx emission reductions in Placer County in the following years.

Figure 3-3
Placer County ROG Emission Inventory Trends
(Base Year: 2008)



Source: CARB 2009 Almanac of Emissions and Air Quality

Figure 3-4
Placer County NOx Emission Inventory Trends
(Base Year: 2008)



Source: CARB 2009 Almanac of Emissions and Air Quality

4. IMPLEMENTATION OF EMISSION REDUCTION IN PLACER COUNTY

The California Clean Air Act (CCAA) under Section 40924 of the Health and Safety Code (H&SC) requires that each triennial plan should include the expected and revised emission reductions for each measure scheduled for adoption in the preceding three-year period. This chapter will review and summarize the progress of emission reductions from the overall control strategies (including stationary, area, and mobile sources) implemented by the District from 2009 to 2011.

4.1 Reduction from Stationary and Area Sources Control Measures

The District has committed to evaluate feasible control measures during the triennial evaluation period for potential rule amendment or adoption to meet the District's commitment for reducing ROG and NO_x emissions in Placer County. Three control measures which were committed for evaluation in the 2009 Triennial Report were amended during this triennial evaluation period (2009-2011).

District Rule 245 – Surface Coating of Metal Parts and Products was amended on August 20, 2009, to address the EPA's comments regarding the updated Control Techniques Guidance (CTG) requirements for miscellaneous metal and plastic parts coatings. This rule was originally adopted by the District on December 9, 2008, to fulfill the regional Ozone State Implementation Plan (SIP) commitment and reasonably available control technology (RACT) requirement; the potential emission reduction was addressed in the 2009 Triennial Progress Report. No addition emission reduction is quantified for this rule amendment during this triennial review period.

- District Rule 218 - Architectural Coatings was amended on October 14, 2010, to fulfill the regional ozone SIP commitment for reducing ROG emissions from the application of architectural coating. The amendment to Rule 218 provides for control measures and standards consistent with CARB's Suggested Control Measure (SCM) for architectural coatings issued on October 26, 2007. The estimated additional ROG reduction from this rule amendment is 0.2 tons of ROG per day.
- District Rule 234 – Auto Refinishing Operations was amended on October 14, 2010, to fulfill the regional ozone SIP commitment for reducing ROG emissions from the application of auto surfacing coating. The amendment to Rule 234 provides for control measures and standards consistent with CARB's SCM for automotive surfacing coatings issued on October 20, 2005. The estimated additional ROG reduction from this rule amendment is 0.045 tons ROG per day.

Two control measures were not considered for further rule adoption during this triennial evaluation period (2009-2011).

- Asphaltic Concrete Production Rule – The commitment for the adoption of the Asphaltic Concrete Production Rule was removed on August 11, 2011, by a revision to the Placer County Portion of the 2009 Sacramento Regional 8-hour Ozone Attainment and Reasonable Further Progress Plan (2009 Ozone SIP). The rule evaluation indicates that the cost effectiveness for the rule implementation would be substantially higher than originally estimated due to the potential emission reduction decreases caused by the economic

downturn. The rule was removed due to it being economically infeasible due to its potential high cost effectiveness.

- Indirect Source Rules for Land Use Development – The commitment for the adoption of the Construction and Operational Indirect Source Rules was removed on August 11, 2011, by a Revision to the Placer County Portion of the 2009 Ozone SIP. The rule evaluation indicated that the additional requirements from the EPA's Economic Incentive Programs Guidance and the California ballot measure Proposition 26 would cause additional compliance costs, including administrative costs and off-site mitigation fees on the land use developers. The rule was removed due to the financial burdens to an already struggling construction and building industry.

Table 4-1 summarizes the statuses of each rule listed which were to be considered as an amendment/adoption in the District's 2009 Triennial Progress Report⁶.

Table 4-1
Summary of the Rule Commitment Status in 2009 Triennial Progress Report

Emission Source Control Categories	Associated District Rule Name	Proposed Schedule of Amendment/Adoption	8-hour Ozone SIP Commitment	Proposed Action	Status
Fugitive Emissions	Cutback and Emulsified Asphalt Paving Materials (Rule 217)	Possible amendment between 2009 and 2011		Evaluate for amendments needed to meet FCAA RACT and CCAA BARCT requirements	To be considered for amendment between 2012 and 2014
Surface Preparation & Cleanup Solvents	Organic Solvent Cleaning and Degreasing Operations (Rule 216)	Possible amendment between 2009 and 2011		Evaluate for amendments needed to meet FCAA RACT and CCAA BARCT requirements	To be considered for amendment between 2012 and 2014
Architectural Coatings	Architectural Coatings (Rule 218)	Possible amendment between 2009 and 2011	yes (2012)	Evaluate for amendments needed to meet FCAA RACT and CCAA BARCT requirements	Amended on Oct. 14, 2010
Auto Refinishing	Auto Refinishing Operations (Rule 234)	Possible amendment between 2009 and 2011	yes (2015)	Amend to meet CARB SCM standards	Amended on Oct. 14, 2010
Adhesives	Adhesives (Rule 235)	Possible amendment between 2009 and 2011		Evaluate for amendments needed to meet FCAA RACT and CCAA BARCT requirements	To be considered for amendment between 2012 and 2014
Graphic Arts	Graphic Arts Operations (Rule 239)	Possible amendment between 2009 and 2011		Evaluate for amendments needed to meet FCAA RACT and CCAA BARCT requirements	To be considered for amendment between 2012 and 2014
Metal Part Coating	Surface Coating of Metal Parts and products (Rule 245)	Possible amendment between 2009 and 2011	yes (2009)	Evaluate for amendments needed to meet FCAA RACT and CCAA BARCT requirements	Amended on Aug. 20, 2009
Asphaltic Concrete	Asphaltic Concrete (new rule)	for future study	yes (2013)	Regulate NOx emissions from burners	Removed by the SIP revision which was approved on Aug. 11, 2011
Land Use Development	Indirect Source Rule (new rule)	for future study	yes (2013)	Mitigate emissions from indirect and areawide sources from new land use development	Removed by the SIP revision which was approved on Aug. 11, 2011
Large Water Heaters and Small Boilers	Large Water Heaters (new rule)	for future study	yes (2015)	Regulate NOx emissions for all new large water heaters (75,000 to 1,000,000 Btu/hr)	To be considered for adoption between 2012 and 2014

In addition to the above rule activities there are several rules which were amended and/or adopted by the District during this triennial evaluation period (2009-2011). Although emission reductions from these rule activities may not be quantified or qualified for the District's triennial evaluation the list shows the District's efforts to look for opportunities to improve air quality:

⁶ PCAPCD 2009 Triennial Progress Report, Table 7-1.

- District Rule 214 - Transfer of Gasoline into Vehicle Fuel Tanks was amended on April 9, 2009, to provide for exemptions for ORVR-equipped vehicles from vapor recovery requirements.
- District Rule 233 - Biomass Boilers was amended on December 10, 2009, to regulate nitrogen oxide (NOx) emissions. Since carbon monoxide (CO) emissions generally have an inverse relationship to NOx, CO is also regulated.
- District Rule 236 - Wood Products Coating Operations was amended on October 14, 2010, to match existing state and federal control measure standards and regional district rules.
- District Rule 238 - Factory Coating of Flat Wood Paneling was amended on October 14, 2010, to include amendments primarily based on the U.S. EPA's "Control Techniques Guidelines for Flat Wood Paneling Coatings".
- District Rule 3 - Open Burning was amended on February 10, 2011. This action rescinded existing rules 301-325 and adopted new rules 301-306 to update the rules to match current state law and to reorganize and update the formatting to enhance rule implementation and enforcement.
- District Rule 502 - New Source Review was amended on February 11, 2010, to update definitions and provisions to comply with the EPA's new source review (NSR) regulations as a revision of the SIP. This rule was amended again on October 13, 2011, to address EPA's comments for SIP approval.
- District Rule 516 - Rice Straw Emission Reduction Credits was adopted on February 19, 2009, to allow for the issuing of Emission Reduction Credits (ERCs) for the reduction of rice straw burning mandated by the H&SC Section 41865. The rule provided for the issuing of ERCs for up to 10,303 acres with an application filing deadline of August 19, 2009.
- District Rule 518 - Prevention of Significant Deterioration Permit Program was adopted on February 10, 2011, to provide for the District's acceptance of delegation from EPA of PSD permitting authority for major sources.

Note: Prior to the adoption of District Rule 516, the anticipated rice burning ERCs were calculated based on 10,303 acres and placed into the 2009 Ozone SIP inventory as the future emissions⁷. The filing deadline has passed with submitted applications received for 3,469 acres. This leaves 6,834 acres of burning emissions that will not be issued as credits which were considered as potential future emissions in the supplemental to the 2009 Ozone SIP inventory projection. Since the actual banked ERCs are less than the anticipated bankable ERCs in 2009 Ozone SIP inventory, these unissued ERC emissions could be considered as a surplus in the regional Ozone SIP progress evaluation. The potential emission reduction from unissued rice burning ERCs is 0.156 ROG tons per day and 0.172 NOx tons per day.

⁷ Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan, Appendix A: Table A6-2 "Summary of Future Bankable Rice Burning Emission Reduction Credits in the Sacramento Nonattainment Area."

4.2 Reduction from Mobile Sources Control Measures

The non-regulatory control measures in the pie charts shown by Figure 3-1, are from mobile sources (including on-road and off-road mobile are about 55% of the total ROG emissions) and are about 85% of total mobile sources NOx emissions in Placer County. Although the District does not have the authority to directly regulate mobile source emissions through the regulatory processes; the District may promote the market-based incentive programs to complement the progress requirement in reducing mobile source emissions.

4.2.1 Regional Incentive Programs for Mobile Sources

In the portions of Placer County located within the Sacramento Federal Ozone Nonattainment Area (SFONA) the District works with the other local air districts in developing the air quality management plan, known as the Sacramento Regional 8-hour Ozone State Implementation Plan (Sacramento 8-hr Ozone SIP). Mobile sources have been recognized as the major contributor to the regional NOx emission inventory. Although the local air districts do not have the authority to regulate mobile sources, reductions can be achieved through market-based incentive programs to promote the lower emission technologies for these mobile sources into the Sacramento ozone non-attainment area. These regional incentive programs include the Carl Moyer Memorial Program, the Sacramento Emergency Clean Air and Transportation (SECAT) Program, and the Lawn Mower Exchange Program.

Carl Moyer Memorial Program and the SECAT Program

The Carl Moyer Memorial Program is a state-funded program codified in H&SC Section 44275 et seq.; it provides incentives on the replacement of agricultural pumps and off road and on road heavy-duty diesel equipment.

The SECAT Program is a partnership between the Sacramento Metropolitan AQMD and the Sacramento Area Council of Governments (SACOG). The Program's goal is to reduce harmful emissions from on-road heavy-duty vehicles operating in the Sacramento region.

Sacramento Metropolitan AQMD administrates both the regional Carl Moyer Memorial Program and the SECAT Program on behalf of the entire SFONA. These emission sources and their associated emission reductions occur throughout the SFONA, with the District's portion of these emission reductions not specifically identified. Since 2009 there have been 409 on-road and 173 off-road vehicle applications and 292 agricultural pumps awarded by the Carl Moyer and SECAT funding in the region which includes Placer County. The Sacramento Region has received about 21.4 million in funding for the Carl Moyer Memorial Program and 13.6 million for the SECAT Program between 2009 and 2011. These two regional market-based incentive programs have provided an estimated NOx emission reduction of 1.52 tons per day from those projects initiated since 2009 including on-road heavy-duty vehicles with 0.5 tons per day reduction and the off-road mobile portion with 0.41 tons per day reduction. Table 4-2 provides additional details on these emission reductions for these two programs.

Table 4-2
Estimated Emission Reductions from
Regional SECAT and Carl Moyer Incentive Programs

Project Categories	Number of Engines				Estimated NOx Reductions (tons/day)			
	'09	'10	'11	Total	'09	'10	'11	Total
On-Road Heavy Duty Vehicles	201	112	96	409	.23	.15	.12	.50
Off-road Self Propelled Vehicles	28	46	99	173	.10	.13	.19	.41
Agricultural Water Pumping Engines	210	78	4	292	0.48	.13	.003	.61
Total	439	236	199	874	.81	.41	.31	1.52

Regional Lawn Mower Exchange Program

The Sacramento Regional Lawn Mower Exchange program was an annual one-day event participated in by local air districts (El Dorado County AQMD, Placer County APCD, Sacramento Metropolitan AQMD, and Yolo-Solano AQMD) and the Sacramento Municipal Utility District (SMUD). The purpose of the program was to promote the use of electric lawnmowers, which benefits regional air quality. This program occurred for each year of this triennial evaluation period (2009-2011), but has been discontinued in 2012 due to the lack of manufacturer sponsorship, resource limitations on SMUD and participating air districts.

The Regional Lawn Mower Exchange Program has replaced over 3,309 old gas-powered lawnmowers with 293 replaced in Placer County between 2009 and 2011. The ROG emissions achieved was about 51.1 tons during that time frame – 0.047 tons per day ROG emissions, with 8.9 tons in Placer County, or 0.008 tons per day ROG emission reduction.

4.2.2 District's Incentive Programs

Clean Air Grant Program

In 2001, the District established the Clean Air Grant (CAG) Program which makes funds available to public and private agencies or individuals for projects whose cost-effectiveness achieves air pollution reductions. The District has two sources of funding available for the CAG Program: the DMV Surcharge Fund and the Air Quality Offsite Mitigation Fund.

DMV Surcharge Fee

The District authorized DMV surcharge was provided for by two Assembly Bills, AB 2766 and AB 923, which allowed for a \$6 surcharge fee on a vehicle registered (DMV surcharge fee) within Placer County. The surcharge revenues are to be used solely to reduce air pollution from on-road motor vehicles and for related planning, monitoring, enforcement and technical studies necessary for the implementation of the California Clean Air Act of 1988. Historically, the District has allocated \$4 of the DMV surcharge to its annual local grant program.

Air Quality Offsite Mitigation Funds

The District receives funding from developers within Placer County through the District's Offsite Mitigation Program for measures that are recommended by the District. This includes the implementing of off-site emission reduction projects or the payment of in-lieu-of fees into the Offsite Mitigation Fund Program in accordance with the District's Board approved Policy Regarding Land Use Air Quality Mitigation Funds. Land use developers can participate in this Program to offset the project's related air quality impacts when the on-site mitigation is not sufficient.

From 2009 to 2011 the District has awarded \$3.6 million to emission reduction projects through the District's CAG program. The overall project lifetime emission reduction for NOx is about 322 tons, which is a 0.29 tons per day reduction.

Lower-Emission School Bus Funding

In addition to the CAG funding the District received funds from voter approved Proposition 1B, The Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act through the State of California, through Senate Bill 88 funding distribution to local air districts. The District was allocated \$2,700,000 to replace old, high emitting public school buses with new buses and to equip in-use diesel school buses with retrofit devices that significantly reduce toxic particulate matter emissions. This program is administered by CARB. Because this low-emission school bus funding primary focuses on the protection of children/students health by retrofitting or replacing old school buses, the potential emission reduction is not quantified.

4.3 Reduction from the District's Forest Biomass Program

Placer County has over one-half million acres of forested land, stretching from Auburn to Lake Tahoe, covering parts of three national forests including 60 percent of Lake Tahoe's West Shore. Years of successful fire suppression activities have left the forests unnaturally dense, with overstocked vegetation (fuel) and a very hazardous fuel load. This poses a significant risk for catastrophic wildfire. The county has had numerous major wildfires since the year 2001 which affected more than 70,000 acres of forested landscape, including critically important upland watersheds and wildlife habitat.

The condition of Placer County's forests and how they are managed has a very strong effect on air quality. Wildfires are a significant source of air pollution including fine particulate matter (PM), ozone precursors, and air toxics, which are extremely detrimental to regional air quality and public health. In addition to wildfires, prescribed burning and open pile burning, which are important tools of forest management for reducing fuel loads, are also a significant source of air pollution.

To address the risk of catastrophic wildfire and improve air quality, the District has teamed with Placer County and other public and private stakeholders to implement environmentally, economically, and socially sustainable forest management activities to help restore these forested landscapes to a fire-resilient condition. The Biomass program accomplishments have included:

1. Quantify through demonstration projects the significant air pollution benefits that result from the utilization of waste biomass for energy as an alternative to pile burning
2. Develop a protocol to determine greenhouse gas reductions from forest thinning and biomass energy activities
3. Assess strategically located and sized distributed biomass energy generation facilities
4. Advocate for a biomass electricity rate that recognizes the full suite of environmental, societal, and economic benefits

Between 2007 and 2011, the District has sponsored numerous projects throughout the county using forest biomass wastes for energy. These have involved Stewardship Contracts with the U.S. Forest Service Tahoe National Forest and Tahoe Basin Management Unit, land conservancy projects, private and forest industry land owners and contractors, as well as the establishment of a regional biomass collection network. Over 15,000 bone dry tons of forest waste was collected, processed, and transported, creating 15,000 megawatt=hours of renewable electricity generation. All of the biomass waste had been destined to be open-pile burned in the field. The projects achieved an emission reduction of 23 tons of NOx and 70 tons of VOCs, which is about 0.016 tons per day of NOx and 0.048 tons per day of VOCs.

4.4 Reduction from Land Use and Miscellaneous Programs

4.4.1 District's Land Use Program

One of the District's goals is to "mitigate effects of growth through the review of development plans for impacts on air quality with work towards mitigating those impacts through initiatives and programs that reduce emissions". As part of an ongoing effort to improve air quality, the District reviews and comments on California Environmental Quality Act (CEQA) documents which are prepared for discretionary development proposals that may result in substantially significant air pollutant emissions within the County. As a part of the review process, District staff makes recommendations for reducing emissions of air pollutants to mitigate potential air quality impacts. These recommendations are then provided to the County, as well as incorporated municipalities within the County, during the planning process.

One of the recognized feasible mitigation measures is the offsite mitigation program which allows an offsite project (e.g., retrofitting vehicles, alternative fuel application, etc.) to be implemented by the applicant or a payment of fees to the District's Offsite Mitigation Funds in lieu of on-site reductions. If a developer chooses to implement the mitigation by paying the fee, the fee received is applied towards emission reduction projects through the District's annual CAG program. The recommendation on the use of offsite mitigation measures is based on an approved action taken by the District's Board in April 2001 in the "Policy Regarding Land Use Air Quality Mitigation Funds". It provides an alternative to developers and lead agencies when a land use project is required to offset the project's related emissions (e.g. vehicle exhaust, water heater, and consumer products) and where on-site mitigation measures are not sufficient to offset the emissions resulting from projects.

During the 2009 to 2011 period, the District received \$594,683 in mitigation fees paid by the land use developers in Placer County. These were managed in concert with the DMV Surcharge fee to provide incentives to emission reduction projects through the annual CAG program. The

overall project lifetime emission reductions from for NO_x were about 53 tons, which is equal to 0.05 tons per day. This reduction is already as included in the District CAG program.

4.4.2 District's Fallen Leaves and Pine Needle Drop-Off Program

The Placer County Meadow Vista Community Plan identified smoke from the burning of leaves and pine needles by residents to be an air pollution concern. In 1997, in an effort to decrease smoke impacts from this burning the Placer County APCD, Placer County Facility Services - Solid Waste Division and Recology (formerly Auburn Placer Disposal Service (APDS)) jointly sponsored a leaves and pine needles drop off at the Meadow Vista Transfer Station.

A debris box specifically for leaves and needles is located at the Meadow Vista Transfer station during a four (4) month period for disposal. Information regarding the program is primarily sent through the distribution of bright orange "door hanger" fliers hung on resident's garbage cans on Recology's routes. Fliers are also distributed by Recology to the local schools and the information is posted on the District's webpage.

The emission reductions are achieved by not burning the leaves and pine needles collected and instead using them for composting. Based on data from the Placer County Facility Services, administrator of this program, the overall project's emission reduction for ROG is approximate 11.6 tons - .01 tons/day from 2009 to 2011 period.

4.4.3 District's Technology Assessment Program

The Technology Assessment Program (TAP) was established by the District's Board of Directors in FY 2009-10 to provide financial assistance in the form of grants for the development and evaluation of technologies which have the potential to reduce air pollution in Placer County. The program's intent is to provide grant funding for studies and other analysis that would help to assess the emission's effects on projects and to foster projects that may result in emission reductions in future years. The emphasis is on projects that have the potential to reduce criteria pollutants and/or greenhouse gases from stationary sources and transportation. The Program has been made available for projects that have the potential to push the edges of technology to achieve higher efficiency/lower impact results.

During this triennial period, two grants have been awarded:

1. The City of Lincoln's Wastewater Treatment and Reclamation Facility (WWTRF) to study and provide a 10% design along with an investigation of waste to fuel gas production processes to produce heat and electricity by way of a fuel cell - awarded August 2009,
2. The Western Placer Waste Management Authority (WPWMA) to study the emissions associated with converting municipal solid waste (MSW) residuals currently being landfilled into energy as compared to current waste disposal practices - awarded December 2011.

4.5 Reduction Summary

Emission reductions from rule amendments along with program management between 2009 and 2011 are shown in Table 4-3. During this time period the District has achieved 0.30 tons per day reduction for ROG and 0.31 tons per day reduction for NO_x. In addition, there have been 0.008

tons per day reduction for ROG and 1.52 tons per day reduction for NO_x resulting from the regional incentive programs (Carl Moyer Memorial Program, SECAT Program, and the Lawnmower Exchange Program).

Table 4-3
Emission Reductions by the
District Control Strategies Implementation between 2009 and 2011

Categories	Associated Rules/Programs	Emission Reduction	
		ROG (tpd)	NO _x (tpd)
District's Rule/Regulation	Rule 218*	0.2	
	Rule 234*	0.045	
District's emission reduction programs	Clean Air Grant (CAG) Program		0.29
	Fallen Leaves and Pine Needle Drop-off Program	0.01	
	District's Biomass Program	0.048	0.016
Total Emissions from District's Rule/Program		0.30	0.31
Regional emission reduction programs	Regional Mobile Source Incentive Programs		1.52
	Regional Lawnmower Exchange Program	0.008	
Total Emissions from Regional Programs**		0.008	1.52

* The rules were committed in the 2009 Triennial Plan.

** Emission Reductions occur throughout the Sacramento Federal Ozone Nonattainment Area

5 COMMUNITY EDUCATION PROGRAM

As a required element under the District's 1991 Air Quality Attainment Plan (AQAP), the District continues to support public outreach programs within Placer County. However, the emission reductions from some of public outreach programs are not easy to be quantified. Below includes a list of continued existing public outreach efforts by the District.

5.1 Spare the Air Program

The Spare the Air Program is a voluntary, summertime effort aimed at reducing air pollution (specifically, ground-level ozone). The District contributes financially and assists in the implementation of the Spare the Air driving curtailment program, which marked its 19th year of operation in 2013. This program is a cooperative effort by the El Dorado County AQMD, Placer County APCD, Sacramento Metropolitan AQMD, and Yolo-Solano AQMD for the Sacramento Region. This program is coordinated with the Spare the Air Programs in the San Francisco Bay Area and the San Joaquin Valley to maintain statewide program consistency.

The air districts of the region coordinate the "Spare the Air" program which provides notification to the public on the daily air quality forecast and advisories. Residents can subscribe to the "Air Alert" program to receive emails or text messages with regional air quality forecasts.

Highlights of the program effort include:

- Over 1492 active Air Alert subscribers in the District along with 349 partners who promote the program, such as employers
- Radio spots promoting general Spare The Air awareness and specific action alerts on Spare The Air days
- Display of ozone and PM maps and information at www.sparetheair.com.
- Scooter, the Spare the Air Mascot, who attended several community events in Placer County communities
- Spare The Air alerts broadcast during Sacramento weather forecasts and printed on the weather page of the Sacramento Bee

A survey conducted by Aurora Research Group of residents in the Sacramento nonattainment area, was done at the end of 2011 to evaluate the effectiveness of the Spare The Air campaign at modifying driving behaviors. A random sample of individuals were contacted and interviewed. The following conclusions are based on the survey results:

- Up to a half million residents noticed the general Spare The Air advisories
- A quarter of those same resident remembered hearing the specific request not to drive on Spare The Air days
- Employer participation has remained stable at about 20%
- Estimated ROG and NOx emission reductions during the 2009-2011 period
 - 2009 - .39 tons/day
 - 2010 - .07 tons/day
 - 2011 - .08/tons/day

Over the last 12 years, the highest percentage of those who drove less on Spare The Air days in the Sacramento Region occurred in 2006 (28%), and the lowest percentage occurred in 2004

(15%). The 2011 year results were similar to the 12-year average of 20%. Outreach efforts associated with the Spare The Air Program will continue in future years, as the implementation of the program is listed as a Transportation Control Measure in the SFONA's federal 8-hour ozone plan.

5.2 Additional Public Outreach Efforts

The District has continued the following public outreach efforts, including:

- Participation in Earth Day Events and other public events
- Development of Sacramento Ozone Non-Attainment Air Quality Survey
- Response to public inquires and continued news media coverage
- Development of informational brochures, newsletters and fact sheets and utilization of the District's website: <http://www.placer.ca.gov/apcd>
- Continued Development of a Regional Land Use Development Handbook

6 TRANSPORT MITIGATION REGULATION

The CCAA requires CARB to assess the contribution of ozone and ozone precursors from upwind regions on ozone concentrations that violate the state ozone standard in downwind areas. The CCAA also directs CARB to establish mitigation requirements for upwind districts designed to mitigate their impact on downwind districts. According to the CCAA requirement, CARB originally established mitigation requirements in 1990 which are contained in Title 17, California Code of Regulations, Sections 70600 and 70601. These regulations were amended in 1993 and more recently in 2003. The CARB Board adopted amendments on May 22, 2003, which became effective on January 3, 2004.

The 2003 State Ozone Transport Mitigation Regulation Amendment requires upwind districts to 1) consult with their downwind neighbors and adopt and implement “all feasible measures” and 2) amend their “no net increase” thresholds for permitting so that they are as stringent as those of their downwind neighbors no later than December 31, 2004. This Amendment is intended to make sure that upwind districts that impact downwind districts with their transported air pollution should implement control measures that are at least as stringent as the downwind district. The CARB has identified the “Broader Sacramento Area” as transporting to the upper Sacramento Valley, the San Joaquin Valley, the San Francisco Bay Area, and the Mountain Counties. According to the definition, a portion of Placer County APCD is in the Broader Sacramento Area.

The first requirement of all feasible measures was addressed during the consultation and creation of the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan⁸. In that plan an extensive all feasible measures analysis was conducted with a list of control measure commitments developed for each air district in the SFONA to reduce air pollutant emissions. The second requirement was implemented through the amendment of District’s Rule 502 - New Source Review which was approved by the District’s Board on December 9, 2004. This rule amendment modified the offset thresholds for ROG and NOx to 10 tons per year, the same thresholds adopted by the San Joaquin Unified APCD, to achieve no net increase in emissions within the District. The following amendment for Rule 502 on February 11, 2010, was to update the definitions and provisions to comply with EPA’s new source review (NSR) reform regulations as a revision of the SIP⁹.

⁸ The 2009 Sacramento Regional Nonattainment Area 8-Hour Ozone Attainment and Reasonable Further Progress Plan which was prepared for 1997 federal 8-hour ozone standard (0.08 ppm) was approved by the Placer County Air Pollution Control District’s Board on February 19, 2009.

⁹ It was amended again in August 2013 to fix a technical correction identified by the EPA.

7 EVALUATION OF FUTURE EMISSION REDUCTIONS

HS&C Section 40914 requires that an air district with a nonattainment designation achieve a reduction in district-wide ozone precursor emissions of 5% or more per year averaged every consecutive three-year period. According to the emission inventories shown in Table 3-1 and 3-2, the overall average rate of total ROG and NOx emission reduction between 2005 and 2008 in Placer County is about 3% per year. This overall averaged emission reduction is less than the mandatory 5% annual emission reduction required by the CCAA, the District is obligated to review and analyze all control measures/reduction programs which are feasible to reduce ozone precursor emissions in Placer County.

7.1 Commitments for the Next Triennial Review Period

All Feasible Measures

The District is committed to reviewing all feasible measures reviewed in conjunction with CARB and other air districts within the SFONA to obtain future emissions reductions. On June 9, 2011, the District's Board adopted the 2011 Reasonably Available Control Technology State Implementation Plan (RACT SIP) which evaluated all feasible control measures. In addition the District is required by the U.S. Environmental Protection Agency to periodically demonstrate that the District's State Implementation Plan (SIP) rules fulfill Reasonably Available Control Technology (RACT) requirements for volatile organic compounds (VOC) and nitrogen oxides (NOx). RACT requires that District rules cover both: (1) source categories for which there is RACT guidance and for which there are affected sources that operate in the District, and (2) major sources in the District. The analysis involved a comparison of all RACT guidance documents with existing District rules and sources that operate in the District.

Table 7-1 contains a list of the proposed control measures scheduled to be amended or adopted for the next triennial period (2012-2014). The actual emission reductions cannot be estimated for those identified control measures at this time; it will be determined during the actual rule evaluation/development process and will be summarized in the next triennial report.

Table 7-1
List of Rule Proposed to be Considered for Amendment/Adoption through 2014

Emission Source Control Categories	Associated District Rule Name	Ozone SIP Commitment	Proposed Action
Incinerator Burning/ Pathological Incineration	Incinerator Burning (Rule 206)		Evaluate for amendment needed to resolve conflicting requirements for human/animal cremation
Gasoline Service Stations (Storage Tanks)	Gasoline Transfer into Stationary Storage Containers (Rule 213)		Evaluate for amendment needed to address new standing loss requirements and deficiencies
Gasoline Service Stations (Transfer to Vehicle)	Transfer of Gasoline into Vehicle Fuel Tanks (Rule 214)		Amend to address US EPA comments for SIP approval
Solvent Cleaning	Organic Solvent Cleaning and Degreasing Operations (Rule 216)		Evaluate for amendments needed to meet FCAA RACT requirements
Fugitive Emissions	Cutback and Emulsified Asphalt Paving Materials (Rule 217)		Evaluate for amendments needed to meet FCAA RACT requirements
Boiler, Biomass	Biomass Boilers (Rule 233)		Evaluate for amendments needed to meet FCAA RACT requirements
Adhesives	Adhesives (Rule 235)		Evaluate for amendments needed to meet FCAA RACT requirements
Graphic Arts	Graphic Arts Operations (Rule 239)		Evaluate for amendments needed to meet FCAA RACT requirements
Surface Preparation & Cleanup Solvents	Surface Preparation and Cleanup (Rule 240)		Evaluate for amendments needed to meet FCAA RACT requirements
Large Water Heaters and Small Boilers	Large Water Heaters (Rule 247)	yes (2015)	Regulate NOx emissions for all new large water heaters (75,000 up to less than 5 million Btu/hr)
Plastic Part Coating	Plastic Parts Coating (Rule 249)		Evaluate for amendments needed to meet FCAA RACT and CCAA BARCT requirements

Table 7-1 includes two new control measures which are 1) Rule 247 committed to in the federal 8-hour ozone attainment plan and 2) Rule 249 identified in the RACT SIP. A detailed analysis will be conducted and evaluated in the next triennial report period when they are expected to be adopted.

Note: the District is proposing Rule 247 to cover all new natural gas fired water heaters and boilers with heat input sizes in the range from 75,000 to 5,000,000 Btu/hr and limit NOx

emissions to 20 ppmv. This proposed rule adoption will generate additional emission reductions from the new boilers with the size in the range of 1 million up to 5 million Btu/hr as it is an additional emission reductions to the District's rule commitment to rated input sizes in the range of 75,000 up to 1,000,000 Btu/hr in 2009 Ozone SIP. The tentative schedule to adopt this new rule will be in October 2013.

Mobile Source Incentive Programs

For the next triennial period through 2014, the District will continue participating in the regional mobile source incentive programs to promote the emission reductions from on-road and off-road mobile sources. In addition to the regional incentive programs, the District also will continue to implement the District's annual CAG program by using the DMV surcharge fee and the offsite mitigation fee to provide incentives for cost-effective emission reduction projects in Placer County.

7.2 Additional Emission Reduction Program

In addition to the committed feasible measure evaluations and the mobile source incentive programs, the District continues to look for the other opportunities which may provide additional emission reductions from non-regulatory sources. The District will continue implementing the forest biomass program into the next triennial period through 2014. The District is sponsoring several projects benefiting air quality including forest fuel thinning treatments, evaluating a proposed distributed biomass energy facility and through a cooperative project with the University of California - Berkeley converting biomass waste to energy along with measuring air pollution emissions from an open slash pile burn. The performances of these projects will be reviewed in the next triennial progress report.

8 CONCLUSION

Placer County has made considerable progress in improving air quality. Air quality indicators show significant overall reductions of peak ambient ozone and county-wide exposure to unhealthy concentrations since 1990. It represents that overall exposure to residents from ozone continues to decrease in Placer County.

Emission inventory information shows a significant overall reduction of ozone precursor emissions between the 2009 and 2011 time period. The District has conducted an “all feasible measures” analysis and committed to amending existing rules and adopt new rules to further reduce ozone precursor emissions. Table 7-1 shows the proposed commitments for the next triennial period (2012-2014). Incentive programs such as the Carl Moyer Program and the District’s Offsite Mitigation Program continue to assist in reducing additional NOx emissions from mobile sources. The District believes that this demonstrates progress in the effort set forth in the control plan towards attaining the state ozone standards in accordance with the CCAA requirements.